Microsoft

.net developer training

Create XML Web Services and Applications with Visual Studio .NET

Building Applications for Mobile Devices

Module 16 Agenda

- Mobile Development:
  - Environment
  - Approaches
  - Tools
- .NET Compact Framework
- Windows® CE
- Visual Studio® .NET Integration
  - Mobile Internet Toolkit
    - Mobile Web Form designer
    - Mobile Controls
    - Device identification

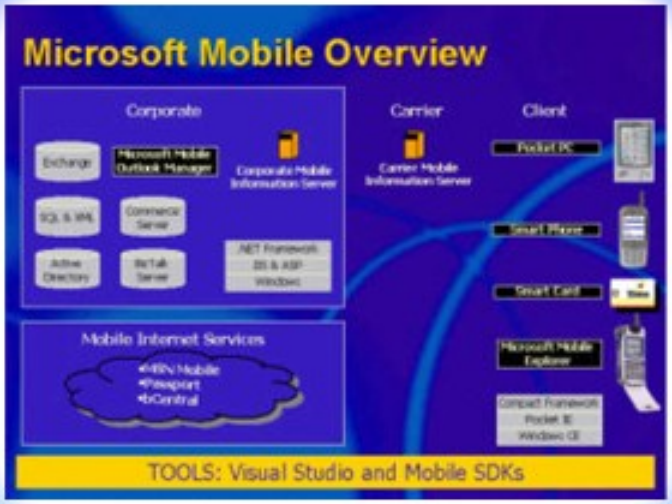
Mobile Development
Environment

Microsoft Visual Studio.net

Single set of familiar productive tools for all development

- Server components
- Rich client applications
- Mobile Web development
- Building Web services
- Consuming Web services

Easily take advantage of all Microsoft mobile



Mobile Development
Approaches

Client Application	• Application on device • Device specific • Fewer devices	• Offline options • Richest UI
Web Application	• Application on server • Runs in browser • Many devices	• Online only • Less UI choice • Easy to deploy

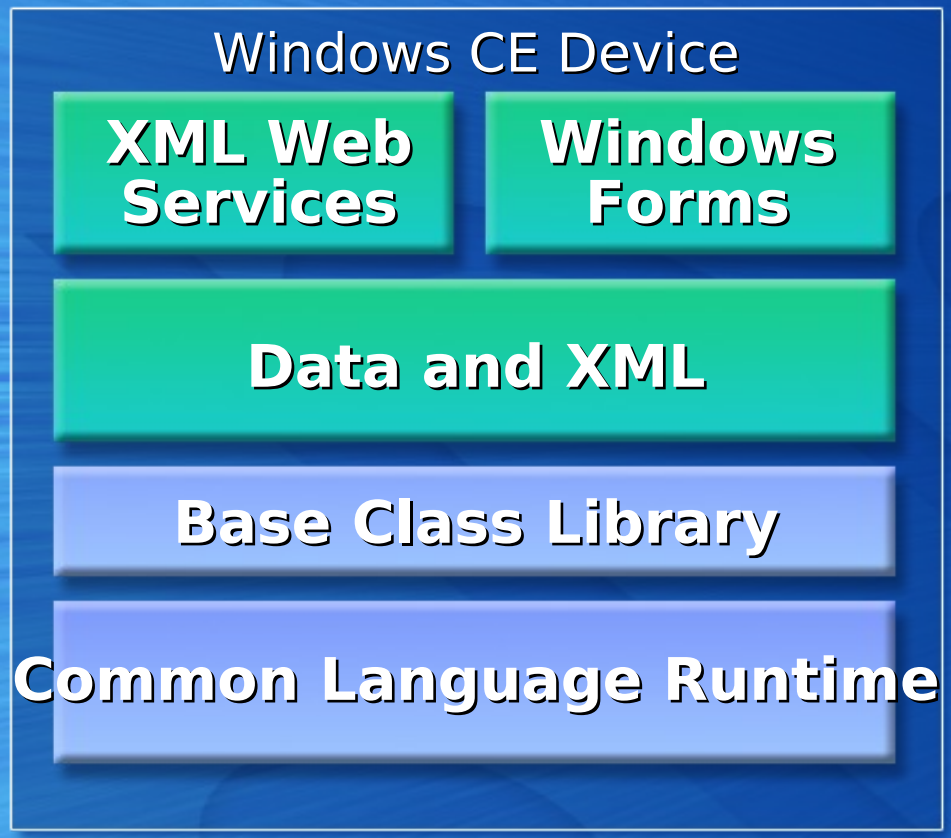
Mobile Development
Tools

	Today	
Client Application	**Embedded Visual Tools** **eVB and eVC++**	**Visual Studio & .NET Compact Framework**
Web Application	**Device-specific Active Server Pages**	**Visual Studio & Mobile Internet Toolkit**

.NET Compact Framework

- Smart Device Extensions
- A subset of the .NET Framework
  - Same programming model
  - Same security as desktop programming model
- Lightweight and Resource Efficient
  - RAM
  - Battery and CPU usage
  - Flash and ROM
- Rich PocketPC Functionality
  - Windows Forms (WinForms)
  - ADO.NET Data Access
  - XML Web Services Client

With Windows CE



Take advantage of Windows richness

Windows UI

- Standard Windows look and feel
- Forms-based UI
- All the standard controls
- Significant subset for small size

XML Web Services

- Windows NT® network integration

Data Access

- Local data (offline)
- Remote data (online)
- Simple structured files (text)

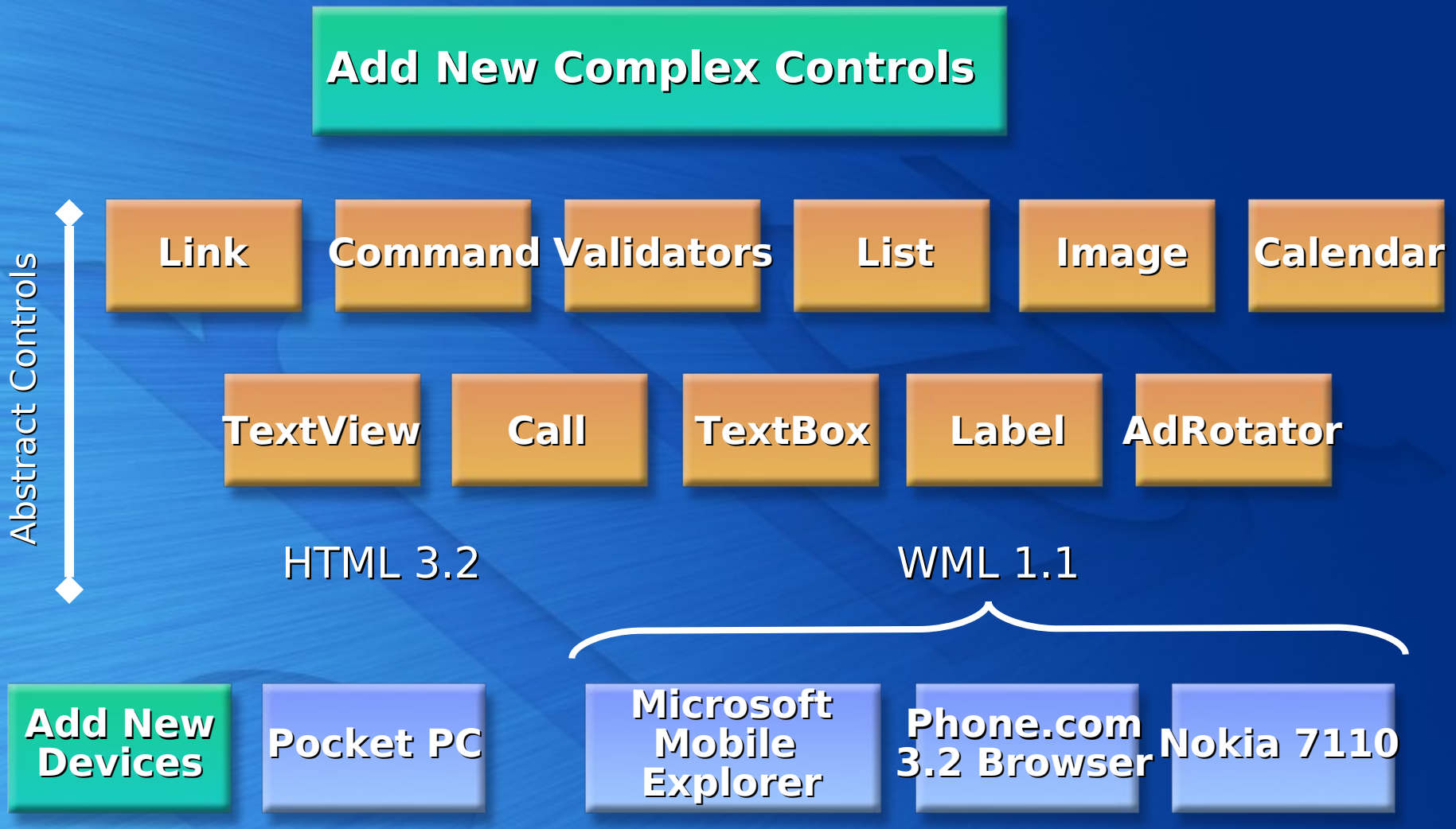
Mobile Internet Toolkit

- Components
  - Mobile controls
  - Mobile designer
  - Rich device identification
- Rapidly develop Mobile Web Applications
- Powerful and flexible
- Easy to customize and extend
  - For future devices

Mobile Controls

- Render based on device capabilities
- Automatically output multiple markup languages
- Built upon ASP.NET control base classes
- Common controls:
  - Label
  - TextView
  - Link
  - Calendar

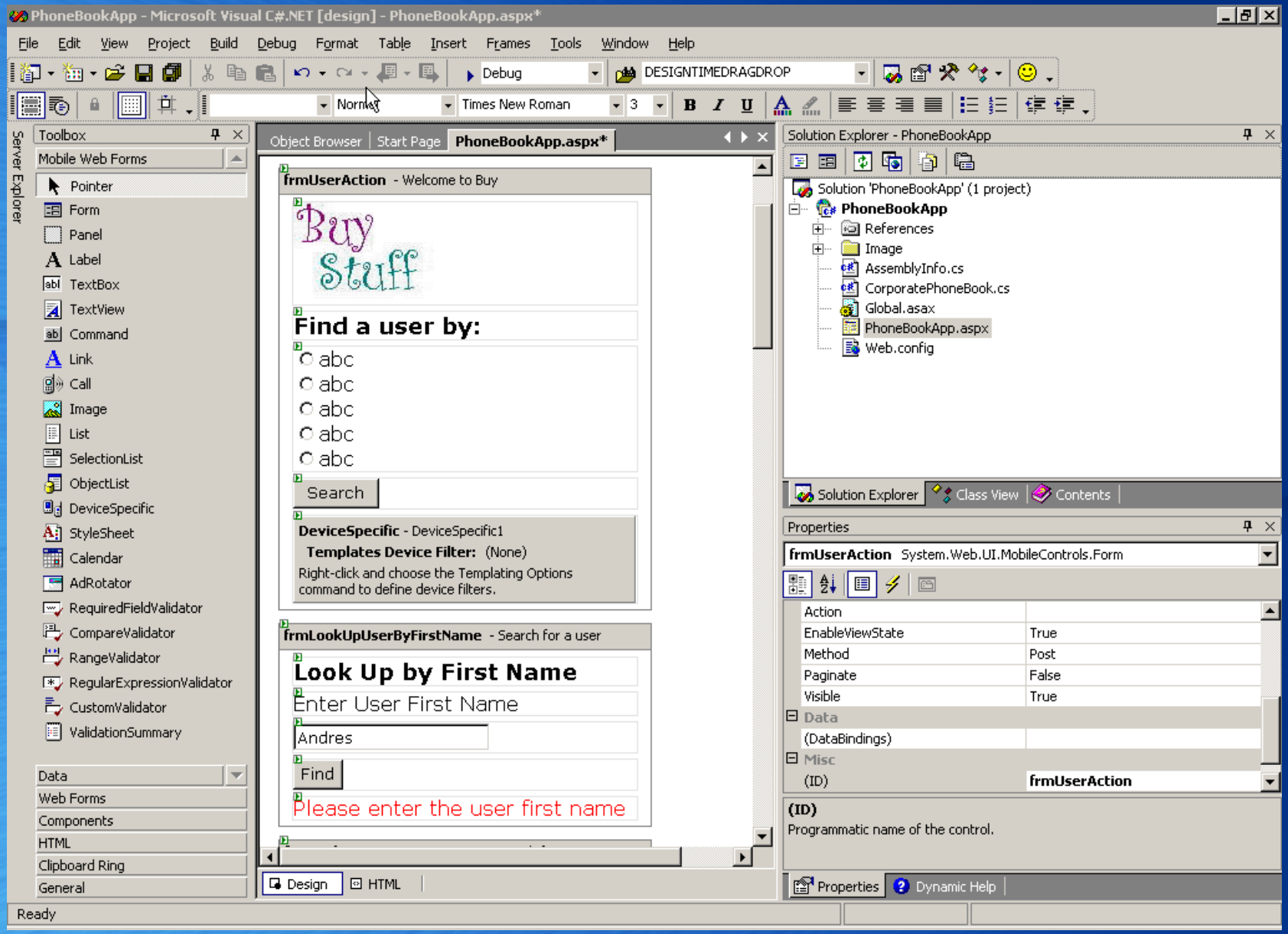
Extensible Control Model



Mobile Web Form Designer

- Integrated into Visual Studio
  - Code development
  - Debugging
  - Code management
- Uses familiar (Visual Basic®-like) authoring
  - Drag and drop creation of mobile applications
  - Properties and events
- Allows Web applications to be authored in numerous languages

Mobile Web Form Designer



Device Identification

- Schema for tracking device capabilities
  - Browser version
  - Markup language
  - Display parameters
    - Resolution
    - Pagination lines
    - Image capabilities
  - Input methods (e.g., number of soft keys)
  - Etc…

Mobile Internet Toolkit
Demo

- **Mobile Internet Toolkit**

Summary

- For client-side development, there is the .NET Compact Framework
- For mobile Web application development, there is the Mobile Internet Toolkit
- Both make it easy to develop mobile applications, but different kinds of mobile applications; choose the right tool for your application

Resources

- **.NET Compact Framework**
  Information at
  http://www.msdn.microsoft.com/net
- **Microsoft Mobile Internet Toolkit 1.0 RC**
  http://msdn.microsoft.com/downloads/default.asp?url=/downloads/sample.asp?url=/msdn-files/027/001/817/msdncompositedoc.xml
- **FM Expense Scenario**
  Mobile Internet Toolkit sample
  http://www.msdn.microsoft.com/code/default.asp?URL=/code/sample.asp?

Resources

- **Pocket PC Emulator**
  Order from
  http://www.microsoft.com/mobile/developer/default.asp

- **Microsoft Mobile Explorer Simulator v.2**
  Download at
  http://www.microsoft.com/mobile/mme/mmemulator.asp

In-Depth Training on Mobile Device Dev

Direct from Microsoft

- 2514A: Developing Mobile Applications with Microsoft Mobile Internet Toolkit (Prerelease)
- 2517A: Deploying and Managing Microsoft Mobile Information Server 2001, Enterprise Edition
- 2540A: Developing Embedded Solutions for Microsoft Windows CE .NET

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